AMENDMENTS TO THE CLAIMS

Claims 1-18 are pending. Claims 1, 4, 7, 10, 13 and 16 are amended. All pending claims and their current status have been reproduced below.

1. (Currently Amended) A method of detecting at least one of a pan and a zoom in a video sequence, comprising:

selecting a set of frames from a video sequence;

determining a set of motion vectors for each frame in the set of frames;

determining a motion angle for each motion vector;

identifying at least two largest regions in each frame having motion vectors with sub-stantially similar motion angles orientation in a reference coordinate system;

determining percentages of each frame covered by the at least two largest regions;

determining a statistical measure of the motion angles vector orientations in the refer-ence coordinate system for at least one of the two largest regions; and

comparing the percentages and statistical measure to threshold values to identify at least one of a pan and a zoom in the video sequence.

2. (Original) The method of claim 1, wherein the step of selecting a set of video frames from a video sequence further comprises:

identifying a scene cut between two frames in the video sequence; and responsive to the identification of a scene cut,

selecting a set of video frames from the video sequence that includes all the frames in the video sequence up to and including a frame just before the scene cut.

3. (Original) The method of claim 2, wherein frame differences and motion infor-mation are used to identify a scene cut.

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1   4.   (Currently Amended) The method of claim 1, wherein the <u>motion angles are</u>

2 <u>computed in</u> ~~reference coordinate system is~~ one from the group of ~~reference~~ coordinate systems

3 consisting of polar, Cartesian, spherical and cylindrical coordinate systems.

1   5.   (Original) The method of claim 1, wherein the percentages of each frame covered

2 by the at least two largest regions are determined from the number of pixels in each region as a

3 percentage of the total number of pixels in a frame.

1   6.   (Original) The method of claim 1, wherein the statistical measure is a variance.

1   7.   (Currently Amended) A system for detecting at least one of a pan and a zoom in

2   a video sequence, comprising:

3   a preprocessor for selecting a set of frames from a video sequence; and

4   a motion analyzer for determining a set of motion vectors for each frame in the set of

5   frames, <u>determining a motion angle for each motion vector;</u> identifying at

6   least two largest regions in each frame having motion vectors with substan-

7   tially similar <u>motion angles</u> ~~orientation in a reference coordinate system~~, de-

8   termining percentages of each frame covered by the at least two largest re-

9   gions, determining a statistical measure of the motion <u>angles</u> ~~vector orienta-~~

10   ~~tions in the reference coordinate system~~ for at least one of the two largest re-

11   gions, and comparing the percentages and statistical measure to threshold val-

12   ues to identify at least one of a pan and a zoom in the video sequence.

1   8.   (Original) The system of claim 7, wherein the step of selecting a set of video

2 frames from a video sequence further comprises

3   identifying a scene cut between two frames in the video sequence and responsive to

4   the identification of a scene cut, and

5   selecting a set of video frames from the video sequence that includes all the frames in

6   the video sequence up to and including a frame just before the scene cut.

1   9.   (Original) The system of claim 8, wherein frame differences and motion informa-
2   tion are used to identify a scene cut.

1   10.   (Currently Amended) The system of claim 7, wherein the <u>motion angles are com-</u>
2   <u>puted in</u> ~~reference coordinate system is~~ one from the group of ~~reference~~ coordinate systems con-
3   sisting of polar, Cartesian, spherical and cylindrical coordinate systems.

1   11.   (Original) The system of claim 7, wherein the percentages of each frame covered
2   by the at least two largest regions are determined from the number of pixels in each region as a
3   percentage of the total number of pixels in a frame.

1   12.   (Original) The system of claim 7, wherein the statistical measure is a variance.

1   13.   (Currently Amended) A computer-readable medium having stored thereon in-
2   structions which, when executed by a processor in a system for detecting at least one of a
3   pan and a zoom in a video sequence, cause the processor to perform the operations of:
4   selecting a set of frames from a video sequence;
5   determining a set of motion vectors for each frame in the set of frames;
6   <u>determining a motion angle for each motion vector;</u>
7   identifying at least two largest regions in each frame having motion vectors with sub-
8   stantially similar <u>motion angles</u> ~~orientation in a reference coordinate system~~;
9   determining percentages of each frame covered by the at least two largest regions;
10   determining a statistical measure of the motion <u>angles</u> ~~vector orientations in the refer-~~
11   ~~ence coordinate system~~ for at least one of the two largest regions; and
12   comparing the percentages and statistical measure to threshold values to identify at
13   least one of a pan or a zoom in the video sequence.

1   14.   (Original) The computer-readable medium of claim 13, wherein the step of se-
2   lecting a set of video frames from a video sequence further comprises:
3   identifying a scene cut between two frames in the video sequence; and responsive to
4   the identification of a scene cut,

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5   selecting a set of video frames from the video sequence that includes all the frames in

6   the video sequence up to and including a frame just before the scene cut.

1   15.   (Original) The computer-readable medium of claim 13, wherein frame differ-

2 ences and motion information are used to identify a scene cut.

1   16.   (Currently Amended) The computer-readable medium of claim 13, wherein the

2 <u>motion angles are computed in</u> ~~reference coordinate system is~~ polar coordinates.

1   17.   (Original) The computer-readable medium of claim 13, wherein the percentages

2 of each frame covered by the at least two largest regions are determined from the number of pix-

3 els in each region as a percentage of the total number of pixels in a frame.

1   18.   (Original) The computer-readable medium of claim 13, wherein the statistical

2 measure is a variance.